

## Description of Application

ViaSat, Inc. (“ViaSat”) seeks authority to operate a 5.4 meter earth station using S-band (2025-2110 MHz) frequencies to serve as a telemetry, tracking and control (“TT&C”) station for the Planet Labs Inc. (“Planet Labs”) constellation of Earth Exploration Satellite Service (“EESS”), non-geostationary orbit (“NGSO”) satellites. The Commission has authorized Planet Labs’s system, including operations of the constellation on the S-band frequencies that will be used by the proposed earth station.<sup>1</sup>

## Coordination with Terrestrial Licensees

The 2025-2110 MHz band is allocated primarily to terrestrial fixed and mobile services, and US Footnote 347 to the U.S. Table of Frequency Allocations (“U.S. Table”) allows EESS operations in this band on a non-interference basis with all other allocated services.<sup>2</sup> The Commission has granted authority to Planet Labs to operate TT&C uplinks in this band on non-interference basis with respect to the primarily allocated services.<sup>3</sup> The proposed earth station operations will be consistent with the frequencies and technical parameters approved for the Planet Labs constellation.

In order to ensure compatibility with terrestrial stations in the vicinity that operate in accordance with the allocations in the U.S. Table, ViaSat has coordinated its proposed operations with the licensees of such stations. Specifically, ViaSat commissioned a coordination study analyzing the proposed earth station operations and the potential effect on terrestrial stations that operate in the 2 GHz frequency range. A copy of the report is included as Exhibit A and was provided to each potentially affected terrestrial station licensee with a request to coordinate the proposed earth station operations. The terrestrial station licensees were each provided at least 30 days to respond, and each responded.

The coordination report identifies one antenna tower location that does not have sufficient terrain shielding from the proposed earth station. Therefore, the report recommends that a shielding berm be erected to mitigate the potential interference to this location. The report also recommends that the earth station antenna controller be configured to prevent transmissions below a 10 degree elevation angle when the azimuth is between 252.4° (true north) +/- 3°. The report suggests conducting testing once these measures have been implemented to verify that the desired degree of protection has been achieved. ViaSat has confirmed to the potentially affected licensees that ViaSat will undertake these mitigation measures. The potentially affected licensees indicated that they were satisfied with this approach and have expressed their interest in participating in such testing.

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<sup>1</sup> See Planet Labs Inc., IBFS File Nos. SAT-LOA-20130626-00087 (granted Dec. 3, 2013); SAT-MOD-20140321-00032 (granted June 18, 2014); SAT-MOD-20140912-00100 (Oct. 23, 2014); SAT-MOD-20150802-00053 (Sept. 15, 2016); Call Sign S2912.

<sup>2</sup> 47 C.F.R. § 2.106 n.US347.

<sup>3</sup> See Planet Labs Inc., IBFS File Nos. SAT-LOA-20130626-00087, Call Sign S2912, Attachment to Grant, ¶ 3 (granted Dec. 3, 2013).

During the course of the coordination discussions, concerns were raised regarding the possible effect of the proposed earth station on communications links between their terrestrial stations and helicopters used in electronic news gathering applications. ViaSat conducted an analysis of this operating scenario using Visualyse to perform terrain modeling. The results of this analysis are provided in Exhibit B and have been provided to the potentially affected station licensees. This analysis shows that the area of concern is relatively isolated and could be coordinated due to the infrequent nature of helicopter operations in the affected area combined with the transient nature of the EESS Commanding operations. The affected station licensee, WSB-TV, concurred with this approach. ViaSat will undertake coordination with WSB-TV regarding its periodic helicopter operations.

### **Radiation Hazard Analysis**

A radiation hazard analysis for the proposed antenna is included as Exhibit C to this application. As demonstrated by the results of the analysis, the proposed earth station complies with applicable Commission requirements in all regions exempt for the area between the feed and the reflector surface. The earth station will be located in an area with controlled access, and no access to the reflector and feed area will be permitted when the earth station is transmitting. Further, the earth station will be operated and serviced by trained personnel. Thus, the proposed operations comply with the RF exposure limits in the Commission's rules.

### **FAA Notification**

FAA notification is not required for the proposed earth station. The maximum height at any operating angle of the proposed 5.4 meter antenna is 6.4 meters and is below the measurement limits set forth in Section 17.7 that require FAA notification.<sup>4</sup>

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<sup>4</sup> See 47 C.F.R. § 17.7(a)-(d) (identifying notification criteria for antenna height, proximity to airports, heliports, and military basis, and other special circumstances).